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# UNIVERSITY OF CALIFORNIA

AGRICULTURAL EXPERIMENT STATION

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## CIRCULAR

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### A WARNING TO OLIVE GROWERS.

FREDERIC T. BIOLETTI.

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In 1895 specimens of a serious disease of the olive were received at the Agricultural Experiment Station from Merced County. This disease, Olive-Knot, is common and destructive in Southern Europe where it is known as Tuberculosis of the Olive. At the time of its discovery in Merced County the hope was entertained that it had not yet spread to any other part of California and that it could be eradicated by prompt and appropriate measures. With the purpose of furthering this desirable object the horticultural commissioners were communicated with and a bulletin published describing the disease and its disastrous effects.\*

Unfortunately the hope entertained in 1895 has not been realized, and this year another and larger infected area has been discovered at a long distance from the first; and there is strong reason to suspect that there are still others. An idea of the destructive nature of the disease, where the climatic conditions are favorable to its development, is given by the history of the infected orchard in Merced County of which an account is given in Bulletin 120. In 1893 a single tree was found infected on one side of the orchard. In 1898 several trees were dead and the disease had spread to a large part of the orchard. In 1900 the orchard had become so badly infected that it was useless and

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\*Bulletin 120, The Olive-Knot.

was dug out. From a single infected tree the disease had passed in seven years throughout the orchard and practically destroyed it.

In the infected area discovered this year the conditions are somewhat different. None of the orchards are more than three or four years old and the trees were evidently infected before they were planted; that is, they were diseased when obtained from the nursery. This is evidenced by the fact, vouched for by a resident of the district who has had exceptional opportunities for observation, that the trees from only one nursery show evidences of disease, and that practically all the trees from that nursery are affected. From the appearance of the trees in September, 1901, there can be little doubt that the virulence of the disease in the new locality will at least equal that displayed in the locality first affected. It is practically certain, therefore, that none of these young orchards where the disease now shows will ever come to bearing age, and the sooner they are uprooted and destroyed, the better for their owners, who will be spared the expense of maintaining useless trees, and the better for their neighbors, whose orchards, by prompt action, may be saved from infection.

*Destruction of Affected Trees.*—There can be no doubt in the minds of those who have witnessed the destructive effects of this disease in warm climates that any young trees showing undoubted symptoms of Olive-Knot in such climates should be destroyed immediately. The same treatment would undoubtedly be the wisest in the case also of old trees or of affected trees in cooler localities in California, if we consider the interests of the olive-growing industry as a whole; for though the Knot may have and probably has extended to several localities already, the policy of destroying the affected trees as soon as found will certainly retard its spread, even though its total eradication is impossible. Whether the attempted eradication is carried out by county horticultural commissioners or by the proprietors of the orchards themselves, the question will arise whether only those trees which show undoubted knots should be destroyed, or whether the uprooting and burning should be extended to all the trees in an affected orchard. It would be extremely expensive and probably useless to adopt the latter course if the disease had extended widely to many localities, and in many old orchards. As, however, but a very small percentage of the old orchards are at present affected and as the young affected orchards will never be of any value, the latter course is undoubtedly the wisest to adopt and the safest for the olive-growers as a whole. All the trees in young orchards which are just beginning to show knots, and which were probably infected in the nursery from which they came, are probably diseased. A grower writes to the Agricultural Experiment Station regarding a young orchard where

only a part of the trees showed knots above ground: "I dug up several trees that I had reason to suspect, but which showed nothing above ground. These too were found a mass of knots." Even though some of the trees in such an orchard do not contain the germs of the malady, it is impossible to pick them out with any certainty; and if but one or two infected trees are left they will sooner or later infect the whole orchard. It is moreover useless to plant young trees, even healthy ones, in places from which diseased trees have been taken. Such replants cannot thrive and will be literally covered with knots the first year after planting.

In view of the serious nature of this disease, which threatens to make olive growing impossible in some of the most favorable localities of the State, it behooves the olive growers to coöperate heartily with the horticultural commissioners in hunting out and destroying all cases of the disease wherever it occurs. It is especially necessary that every olive nursery should be carefully examined and no one should plant young trees from a nursery before they have satisfied themselves by personal inspection, or have received a satisfactory guaranty from the nurserymen or the county horticultural commissioner that the nursery is free from any case of the disease. The disease is highly infectious, so that a tree apparently healthy but growing near a tree which shows signs of the disease almost certainly contains the germs of the disease itself.

Those who are unfamiliar with the symptoms can obtain Bulletin 120 by applying to the Agricultural Experiment Station at Berkeley. In this bulletin the disease is described with sufficient detail to enable anyone to recognize it. In buying young trees for planting it is well to remember that it is possible for the nurseryman to remove the knots from slightly affected trees, so that they may appear healthy when received by the purchaser. Such trees will almost certainly develop the disease later, after planting in the orchard. The only safe method is to examine the trees in the nursery, preferably in July or August, at which time the knots are growing rapidly, making it impossible to disguise the disease in a badly affected nursery.



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1. Young tree planted to replace one destroyed by knot. Photograph taken twelve months after planting.

2. Large knots on still vigorous branch of old tree.

3. Small knots on much weakened branch.